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valido flante vento à setemptrione ; crassique vapores
ascendere visi sunt è fluvio portuque vicino.

In thermometro domini de Reaumur, sequentes
mutationes observatæ fuere.

7^h 20' Spiritus vini 12° & dimidium altitudinis
supra terminum congelationis aquæ obtinebat.

h							o
8	12	.	.	.	.	.	13
8	30	.	.	.	.	.	12 $\frac{1}{2}$
8	43	.	.	.	.	.	12 $\frac{3}{4}$
8	55	.	.	.	.	.	11 $\frac{3}{4}$
9	30	.	.	.	.	.	12
10	0	.	.	.	.	.	12 $\frac{1}{2}$
10	40	.	.	.	.	.	13 $\frac{1}{4}$

LXXIII. *An Account of some astronomical
Observations taken at Lisbon by M. John
Chevalier in the Year 1753. By James
Short, M. A. and F. R. S.*

Read March 14, 1754. **T**HIS gentleman mentions two emer-
sions of the satellites of Jupiter,
viz. one of the first, and another of the third, both
observed, in a very clear air, with a Gregorian te-
lescope six feet long. Dr. Bevis, from a great num-
ber of observations, has computed *formulae* of tables for
the times of the immerfions and emerfions of the first
satellite of Jupiter, and which times we have seldom
found to differ from the observations above 10" : By
com-

comparing, therefore, the time of the emerſion of the firſt ſatellite obſerved by this gentleman, with the time computed from theſe *formulæ*, the difference of longitude between London, at St. Paul's, and the place of obſervation at Liſbon, comes out to be $36^{\circ} 6''$; and by ſeveral former correſponding obſervations the difference had been found to be $36^{\circ} 10''$. By ſome obſervations of the ſame ſatellite, ſent me lately by the reverend P. Pezenas at Marſeilles, and which he had received from ſome aſtronomers at Liſbon, the difference of longitude between London and Liſbon is ſometimes $34'$, and ſometimes $35'$: But it is to be remarked of theſe gentlemen, that tho' they both obſerved at the ſame place, and thro' refracting teleſcopes of the ſame length; yet they ſometimes differ from one another a whole minute, in the time of emerſion.

M. Chevalier further mentions the obſervation of the eclipse of the ſun laſt October, thro' a teleſcope of 15 palms. He ſaw both the beginning and end, in a very clear air; and ſays, that the greateſt quantity of the eclipse was 11 digits and 5 minutes, which he meaſured with a micrometer; but, unluckily, has not given us either the diameter of the ſun, or that of the moon, which he might have meaſured (for the eclipse was annular), tho' he was at the pains of meaſuring all the digits, both in the increaſe and decreaſe of the eclipse. He further takes notice, that, at the time of the greateſt obſcuration, the light of the ſun was remarkably diminiſhed; and that they were able to ſee Jupiter, Venus, and ſome ſtars of the firſt and ſecond magnitude; but he could not ſee Mercury, on account
of

of his proximity to the sun: And that a reflecting speculum, of three palms in diameter, which could melt lead, when placed in its focus, and instantly set wood in a flame; did produce the same effects, even when the sun was seven digits eclipsed; but that, about the time of the greatest obscuration, it was not able to burn wood, tho' held in its focus for some time: And that, at the same time, the air became very cold, the wind blowing hard from the north; and that some vapours, or fog, were seen to rise out of the river and adjacent harbour.

He likewise mentions some alterations in the spirit of wine thermometer of M. de Reaumur, during the eclipse.

The same eclipse of the sun was observed also at Lisbon by A. P. Eusebius da Veiga, professor of mathematics. His times of the beginning and end are somewhat earlier than those of M. Chevalier; and he also makes the greatest obscuration larger, by 3 minutes of a digit.

To his account of this eclipse he subjoins some occultations of stars by the moon, observed by him at Lisbon last year; viz. of Venus, on the 27th of July; of α *Librae*, on the 5th of August; and of β *Capricorni*, on the 5th of October.